

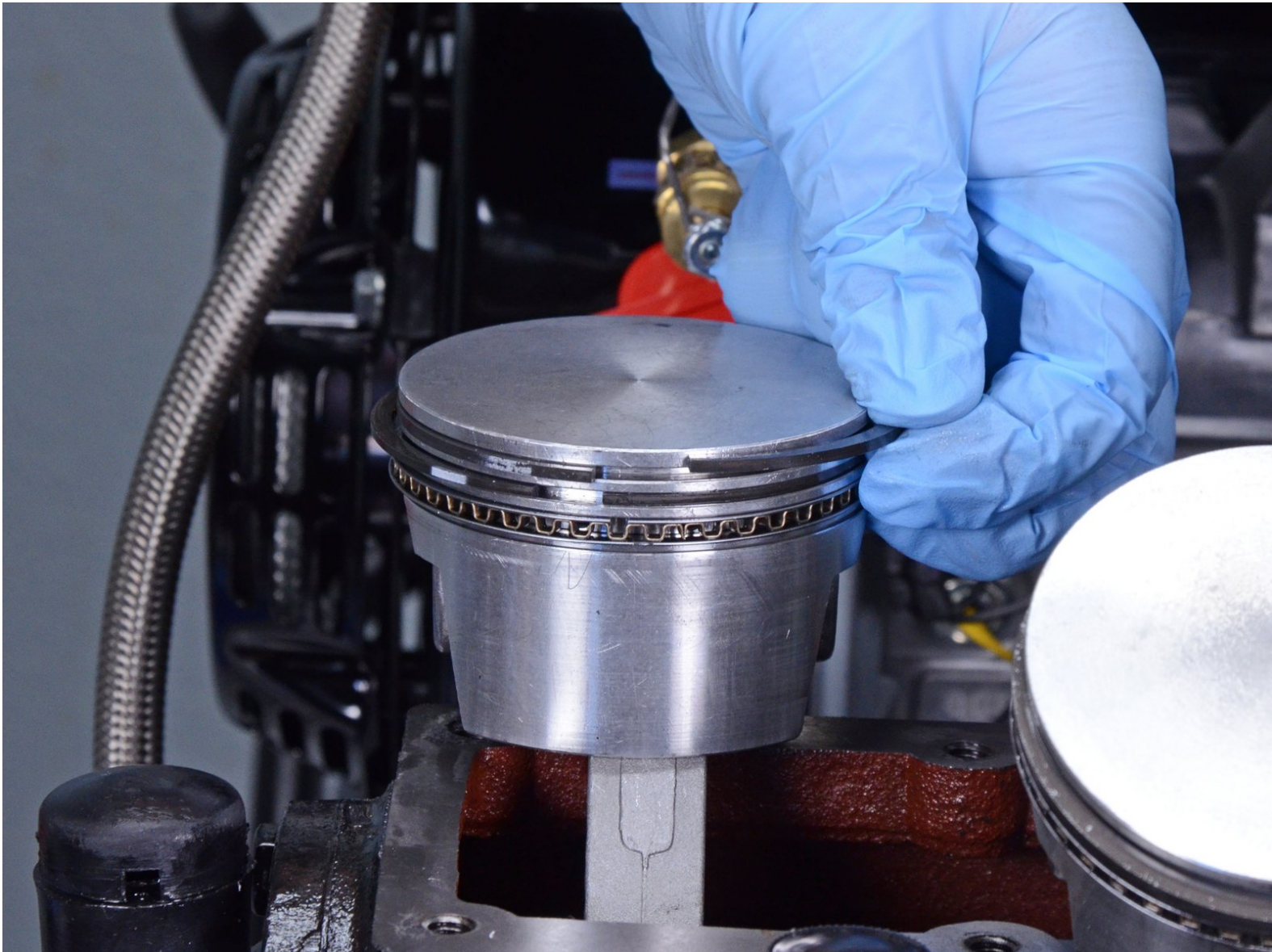


MiTM Air Compressors AM1PH6508HD 2012

Piston Rings Replacement

Use this guide to replace the piston rings on a Mi-T-M Air Compressor AM1-PH65-08HD 2012.

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INTRODUCTION

Use this guide to replace the piston rings on a Mi-T-M Air Compressor AM1-PH65-08HD 2012.



TOOLS:

- [7/8" Wrench](#) (1)
- [10mm Wrench](#) (1)
- [7/16" Wrench](#) (1)
- [7/16" Socket Wrench](#) (1)
- [1/2" Socket Wrench](#) (1)
- [Large Needle Nose Pliers](#) (1)
- [1/2" Wrench](#) (1)
- [Latex or nitrile gloves](#) (1)
- [Piston Ring Compressor](#) (1)

Optional



PARTS:

- [Mi-T-M Piston Ring Kit 70-0518](#) (1)

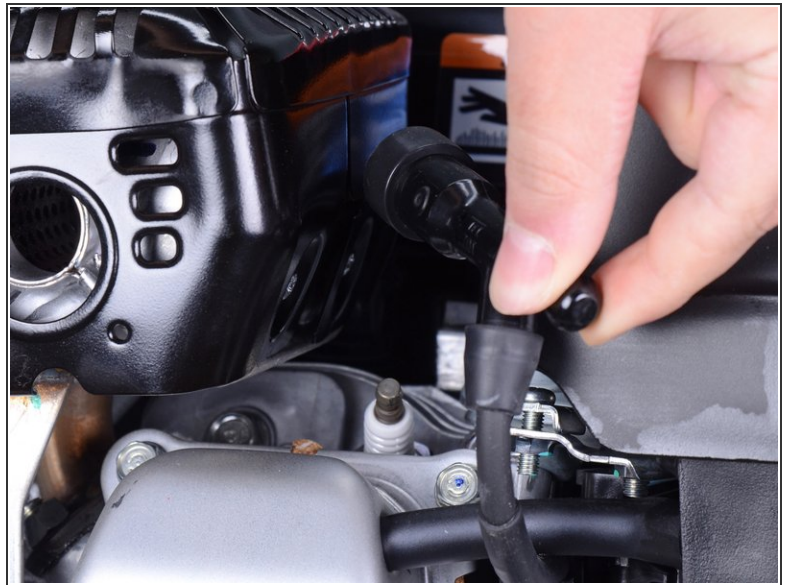
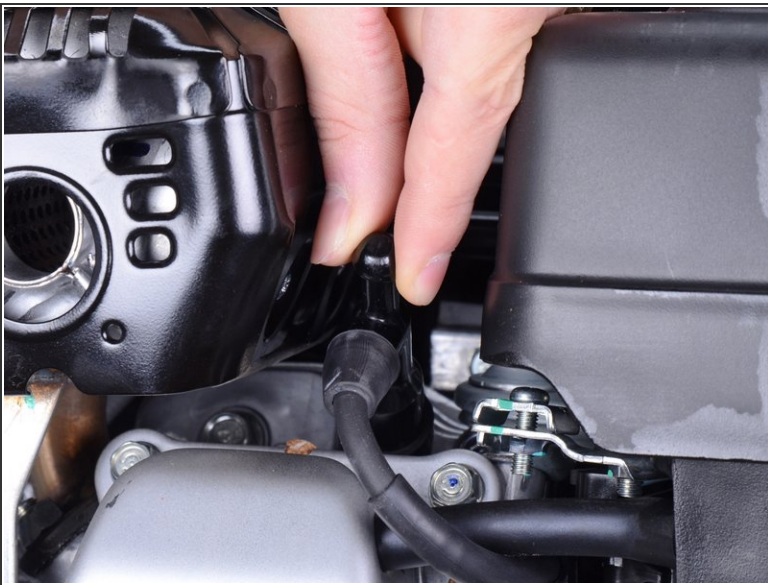
Step 1 — Turn off the engine



⚠ Before you begin, make sure the device is powered down and cool to the touch.

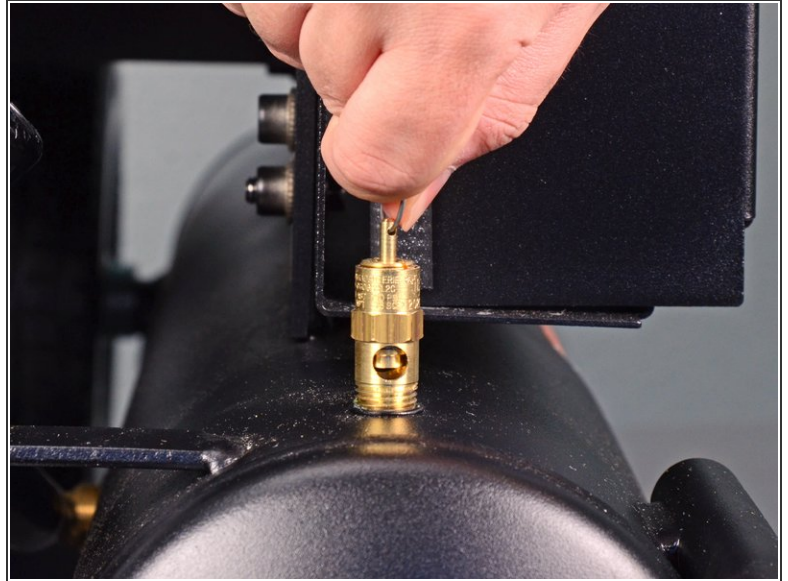
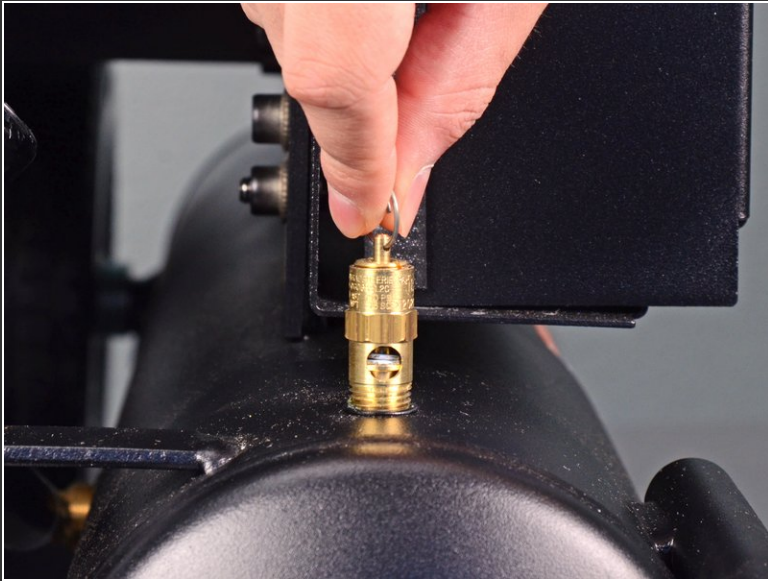
- Flip the engine switch into the **OFF** position.

Step 2 — Disconnect the spark plug



- Grab the plastic housing at the end of the spark plug wire.
- Pull firmly to disconnect the wire from the spark plug.

Step 3 — Drain the compressor tank



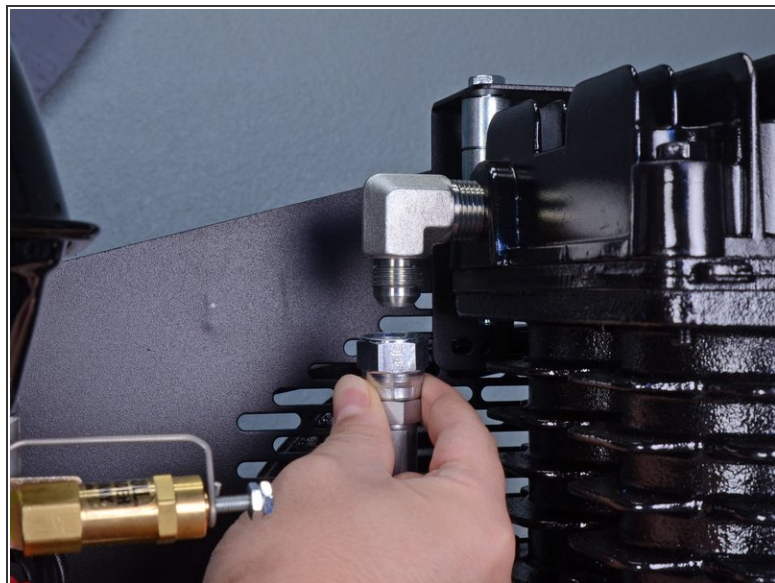
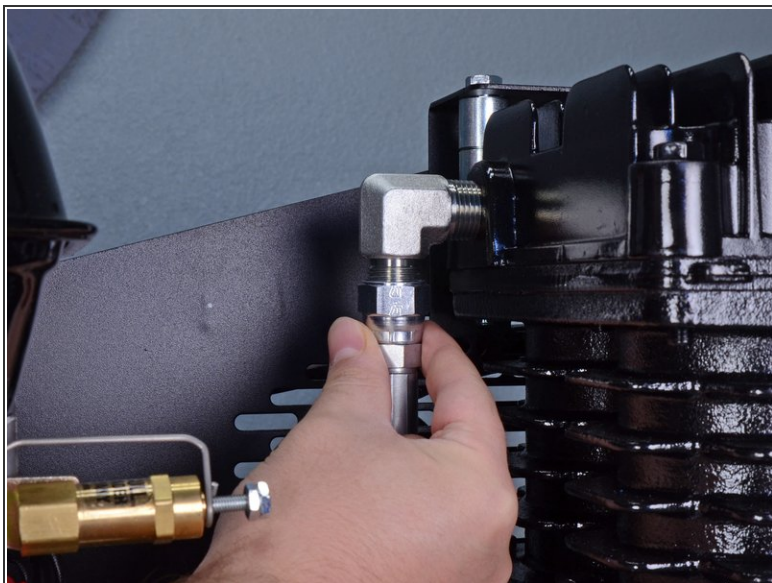
- Pull the ring on the safety relief valve away from the compressor tank to drain the air from the compressor.
- ⓘ Ensure the tank is completely depressurized before starting repairs.

Step 4 — Disconnect the pump discharge line



- Use a 7/8 inch wrench to loosen the nut securing the pump discharge line to the elbow on the cylinder head.

Step 5



- Remove the pump discharge line from the elbow.

Step 6 — Remove the belt guard cover bolt



- Use a 10 mm socket to remove the bolt securing the belt guard.

Step 7 — Remove the belt guard cover



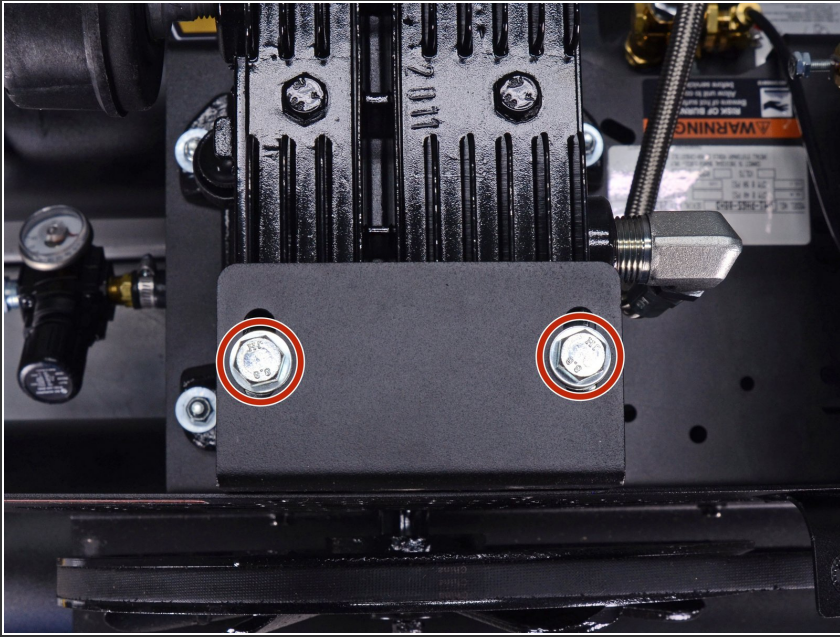
- Tilt the belt guard away from the device and lift it out to remove it.

Step 8 — Remove the belt guard bracket bolts



- Use a 7/16 inch socket to remove the nuts and accompanying bolts securing the belt guard bracket to the rear belt guard.
- ⓘ You may need to hold the bolts in place with a 7/16 inch wrench during removal.
- ⓘ Don't misplace the washers that are removed during this step.
- ★ During reassembly, you may need to slightly loosen the two head bolts securing the belt guard bracket in order to properly align the bracket with the mounting holes in the rear belt guard.

Step 9



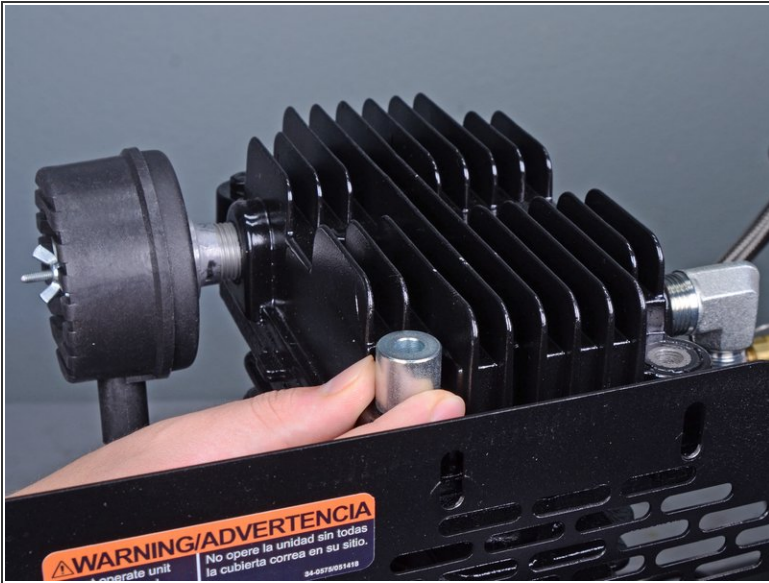
- Use a 1/2 inch socket to remove the two bolts securing the belt guard bracket to the cylinder head.
- ⓘ Don't lose the loosened spacers underneath the belt guard bracket.
- ⓘ Don't misplace the washers that are removed during this step.

Step 10 — Remove the belt guard bracket



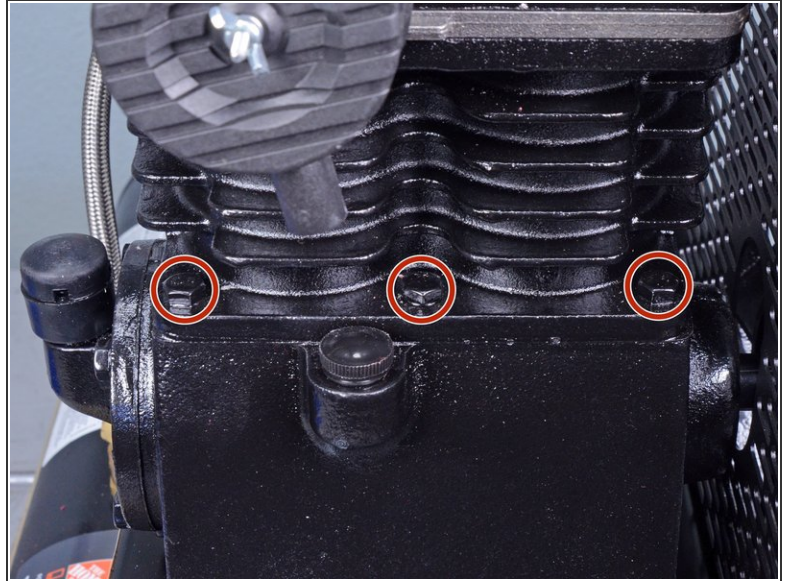
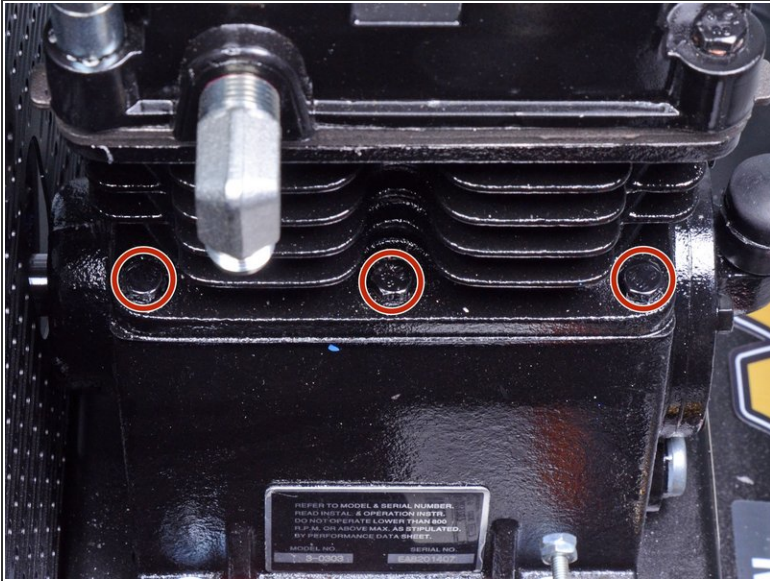
- Lift the belt guard bracket straight up to remove it.

Step 11 — Remove the spacers



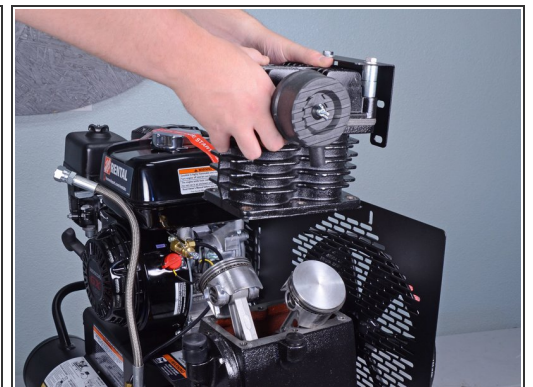
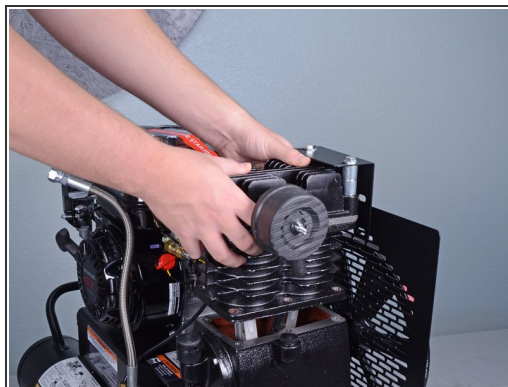
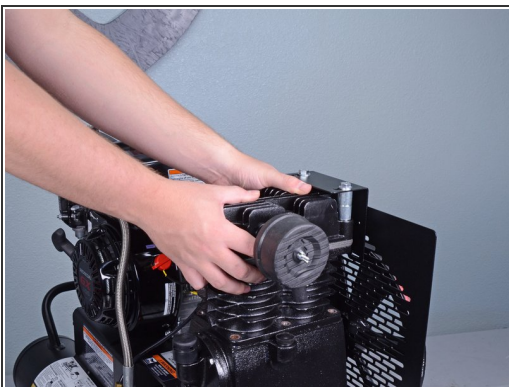
- Remove the four spacers from the top of the cylinder head.

Step 12 — Remove the cylinder bolts



- Use a 1/2 inch socket to remove the six bolts and washers securing the cylinder to the crankcase.
 - ⓘ You may need to use a larger size socket if the coating on the bolts prevents the 1/2 inch socket from fitting.
 - ⓘ You may need to use a 1/2 inch wrench if a socket is obstructed by the fin stacks on the cylinder.

Step 13 — Remove the cylinder



- Lift the cylinder from the air compressor and set it aside.
 - ⓘ You may need to loosen the gasket between the cylinder and the air compressor.
 - ⓘ The two pistons will fall to the sides when you lift off the cylinder.

Step 14 — Remove the compression ring and wiper ring



- i** The piston rings are oily, so wear gloves to keep the piston as clean as possible and to avoid having the rings slip while you work.
- Rotate the top compression ring until its gap is facing you.
 - Push the left side of the compression ring completely into the compression ring groove.

Step 15



⚠ Bending the compression ring in the horizontal direction may cause it to break.

⚠ Avoid scratching the top surface of the piston.

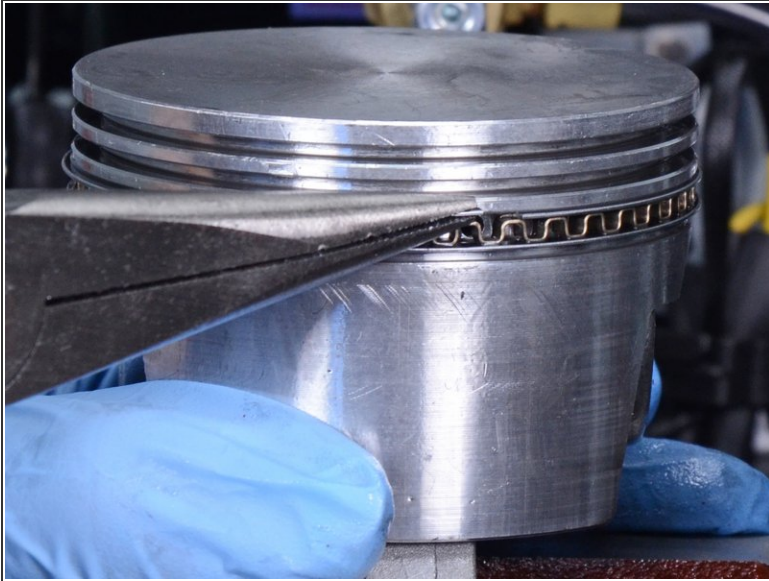
- Grasp the right edge of the top compression ring and lift the end up and over the top edge of the piston.
- Lift the piston ring as you rotate the entire ring counterclockwise (looking at the piston from above) to guide the ring out of its groove.

Step 16



- With the top compression ring out of its groove, swing it out and off of the piston.
 - Remove the compression ring and set it aside.
- Repeat the last three steps to remove the wiper ring (the second ring from the top).

Step 17 — Remove the top oil ring rail



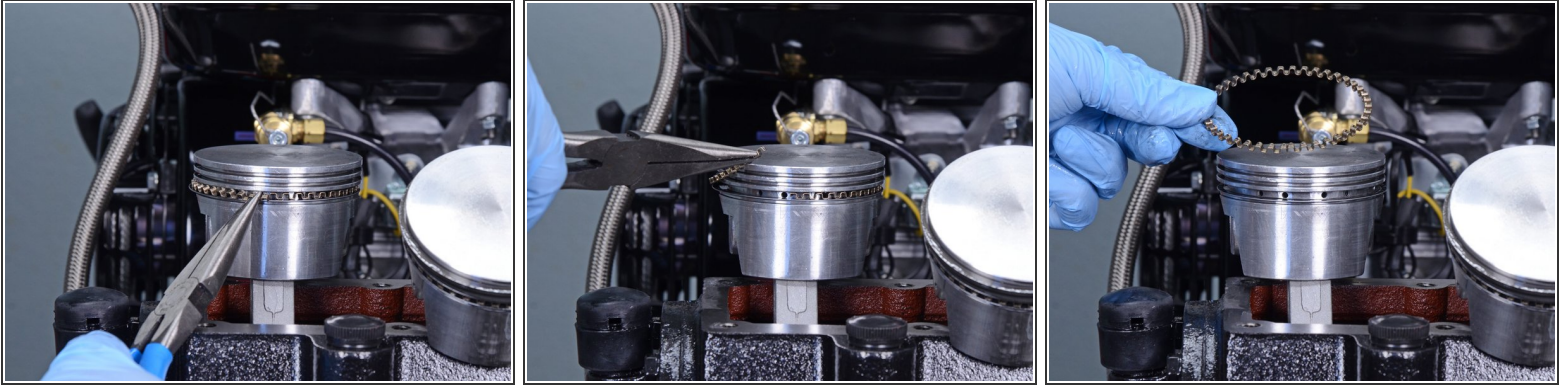
- Rotate the top oil ring rail so that its gap is facing you.
- Use a pair of needle nose pliers to lift up the left end of the top oil ring rail enough to grip it with your fingers.
- ⚠ Avoid scratching the top surface of the piston.

Step 18



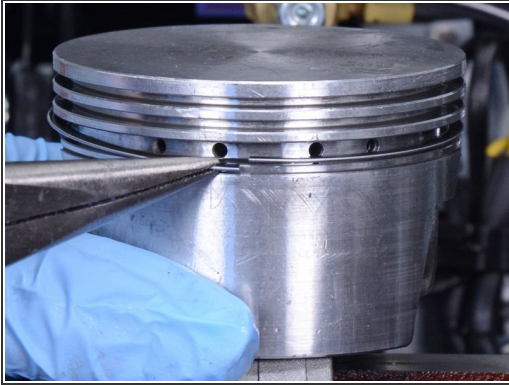
- Use your fingers to lift the top oil ring rail clockwise around the piston.
- Remove the top oil ring rail and set it aside.

Step 19 — Remove the oil ring expander



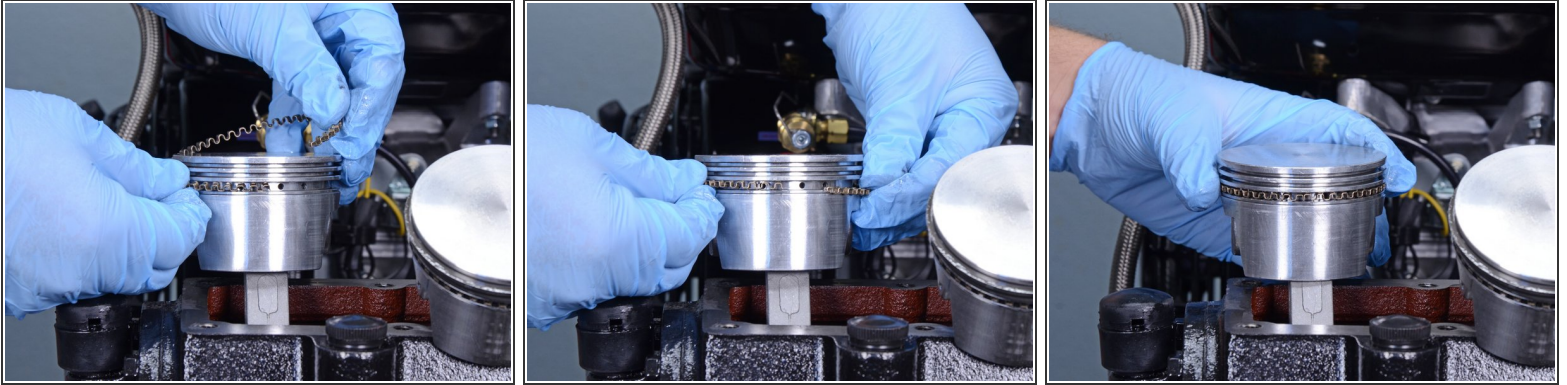
- Rotate the oil ring expander so that its gap is facing you.
- Use a pair of needle nose pliers to lift up the left end of the top oil ring expander enough to grip it with your fingers.
 - ⚠ Avoid scratching the top surface of the piston.
- Use your fingers to lift the oil ring expander out of its groove, working your way clockwise around the piston.
- Remove the oil ring expander and set it aside.

Step 20 — Remove the bottom oil ring rail



- Rotate the bottom oil ring rail so that its gap is facing you.
- Use a pair of needle nose pliers to lift up the left end of the bottom oil ring rail enough to grip it with your fingers.
 - ⚠ Avoid scratching the top surface of the piston.
- Use your fingers to lift up the bottom oil ring rail, working your way clockwise around the piston.
- Remove the bottom oil ring rail and set it aside.
- Repeat the last seven steps to remove the piston rings from the second piston.

Step 21 — Insert the replacement oil ring expander



- Insert the left end of the replacement oil ring expander into the oil ring groove.
- Continue inserting the oil ring expander into the groove by working your way around the piston clockwise.
- ⓘ Make sure the oil ring expander is completely inserted into the oil ring groove.


Step 22 — Insert the oil ring rails



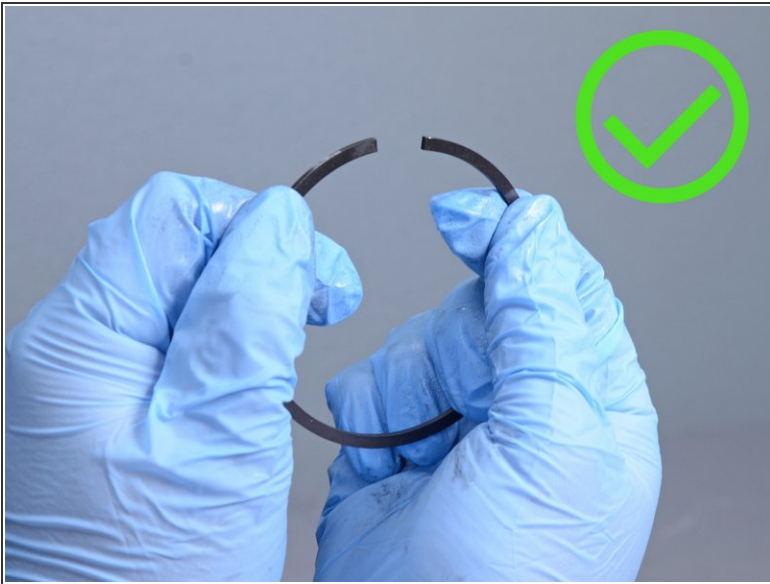
- Insert the left end of the replacement top oil ring rail into the oil ring groove directly above the oil ring expander.
 - ⓘ The top oil ring rail, bottom oil ring rail, and oil ring expander all share the same oil ring groove. The top oil ring rail will be sitting directly on top of the oil ring expander.
- Continue inserting the top oil ring rail into the groove by working your way around the piston clockwise.
 - ⓘ Make sure the top oil ring rail is completely inserted into the groove.
- Repeat this step for the bottom oil ring rail.


Step 23 — Replace the compression ring and wiper ring



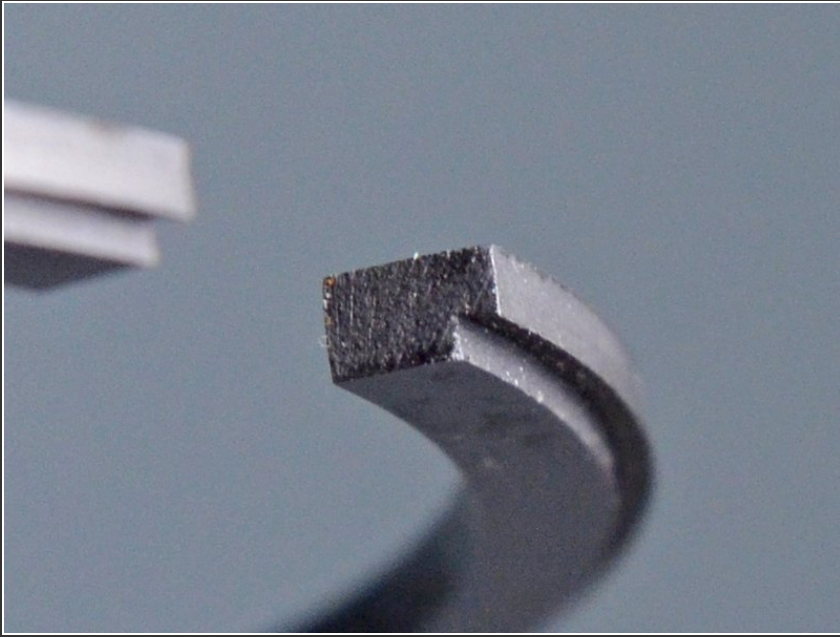
 The composite compression and wiper rings are not designed to be bent in a way that moves their ends horizontally away from one another. Doing so excessively may cause the rings to break.

Step 24



 The compression and wiper rings are designed to be bent mainly in the **vertical** direction, and they're stronger and more flexible in this direction only, so keep this in mind during the procedure.

Step 25



- ① The wiper ring has a small shelf.
- ① Position the smaller diameter of the wiper ring on the bottom of the wiper ring groove, so that the smaller diameter is closer to the oil ring, and the larger diameter closer to the top surface of the piston.
- ① This shelf functions to pull oil off of the cylinder wall during the downward strokes of the piston.

Step 26



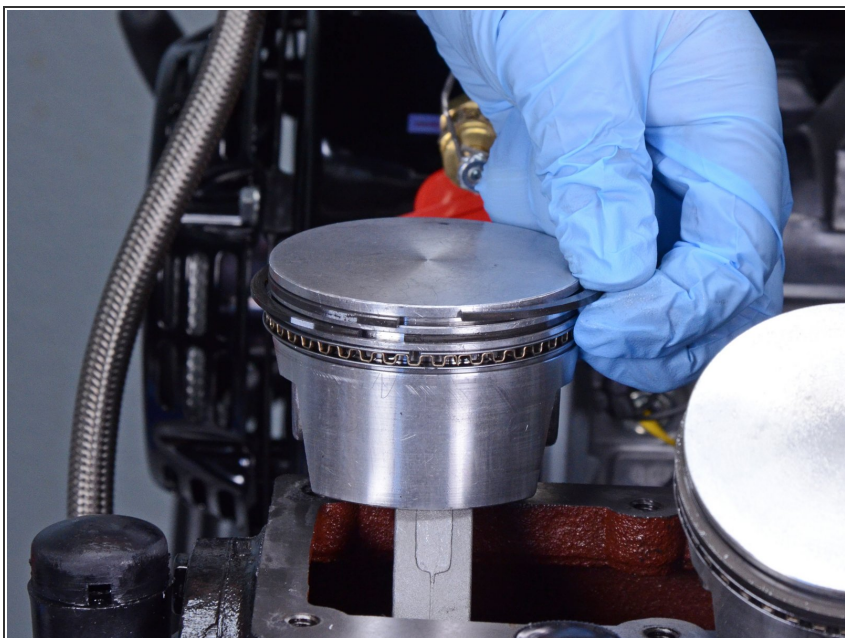
- Insert the left end of the wiper ring into the wiper ring groove.

Step 27



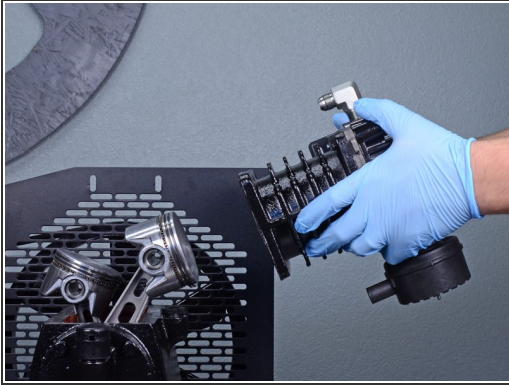
- Continue pushing the wiper ring into the groove by working your way around the piston clockwise (when viewed from above).
- Fully insert the wiper ring into its groove.

Step 28



- Repeat the last two steps for the compression ring.

Step 29 — Place the cylinder back on the air compressor

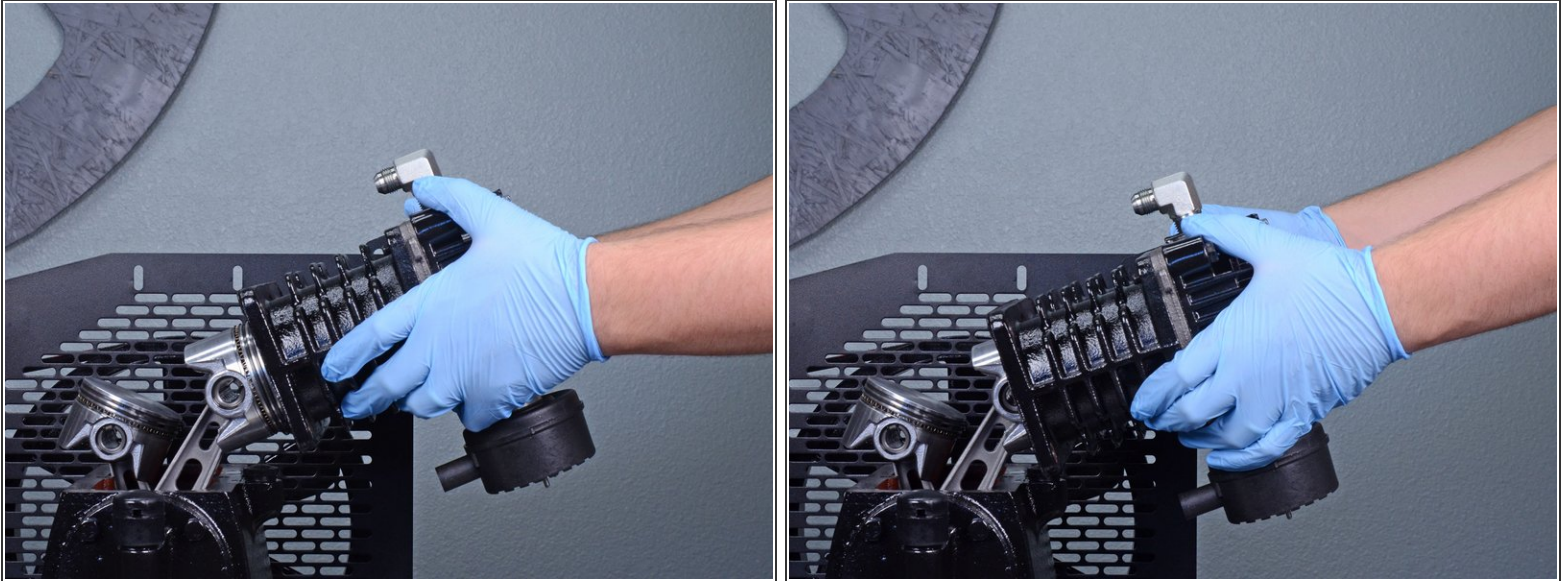


i Replace the gasket between the cylinder and air compressor if it isn't intact.

- Rotate one piston to top dead center.
- Align the upper piston with its corresponding cylinder.
- While holding the cylinder closely aligned with the piston, use one hand to compress the piston rings.
- With the piston rings compressed, begin to lower the cylinder onto the upper piston.

i If you have access to a ring compressor, it can be used, but is not necessary.

Step 30



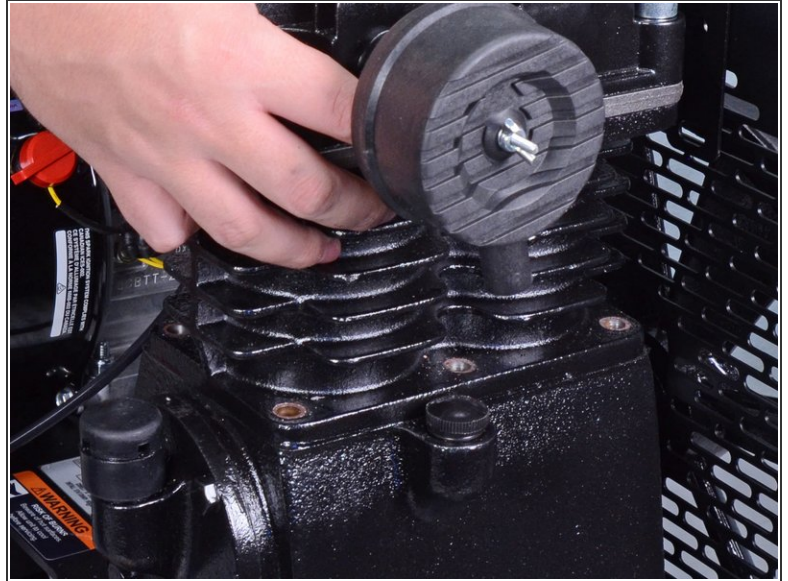
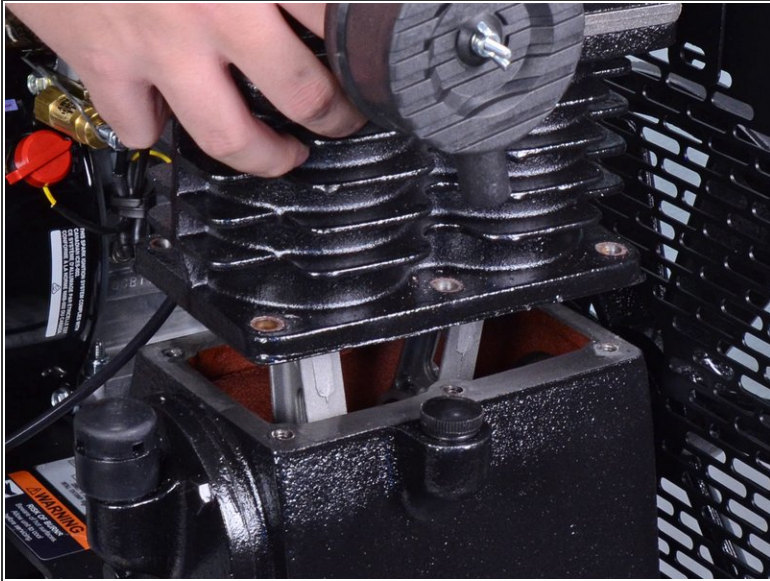
- Push the cylinder onto the upper piston until all piston rings are compressed by the cylinder wall.
- ❗ Make sure to keep the cylinder supported so the piston is not supporting the entire weight of the block.

Step 31



- While continuing to support the cylinder, compress the lower piston's rings.
- Align the lower piston with the empty cylinder.
- With the piston rings compressed, begin to lower the cylinder onto the upper piston.

Step 32



- Push the cylinder onto the lower piston until all piston rings are compressed by the cylinder wall.
- Once both pistons are seated smoothly in the block, lower the cylinder down and push to seat against the gasket.

To reassemble your device, follow these instructions in reverse order starting at step 12.